ABSTRACT OF THE DISCLOSURE

A reaction state at an upstream portion of the catalyst unit in which a partial oxidation reaction occurs is detected by a first reaction state detector, and a reforming reaction state in the whole of the catalyst unit composed of a catalyst for promoting a steam reforming reaction and a catalyst for promoting a partial oxidation reaction is detected by a second reaction state detector. Based on a reaction state detected by the second reaction state detector, a first corrector corrects feed amounts of raw fuel gas and oxidation gas, which are supplied to the catalyst unit, and a second corrector corrects a feed amount of the oxidation gas supplied to the catalyst unit and/or a feed timing thereof, based on the reaction state detected by the first reaction state detector.